REMARKS

Reconsideration of the application in view of the following remarks is respectfully requested. No claims have been added, cancelled, or amended. Thus, Claims 1, 3-17, and 19-32 are currently pending in the application.

Claim Rejections – 35 U.S.C. § 103(a)

Claims 3 and 19 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

Claims 1, 4-17, and 20-32 stand rejected under 35 U.S.C. § 103(a) as allegedly being anticipated by U.S. Patent No. 5,842,002 issued to Schnurer et al. ("*Schnurer*") in view of U.S. Patent No. 6,357,008 issued to Nachenberg ("*Nachenberg*").

Applicant respectfully traverses.

Independent Claim 1

With regard to independent Claim 1, there is recited:

A computer-implemented method for executing an untrusted program, comprising:

     establishing a limited environment within a general environment, wherein said limited environment comprises at least one mock resource, wherein said general environment comprises at least one real resource, **wherein said limited environment and said general environment are both provided by the same operating system**, and wherein programs executing within said limited environment cannot access the one or more real resources in said general environment;

     executing at least a portion of an untrusted program within said limited environment; and

     examining said limited environment after execution of at least said portion of said untrusted program to check for undesirable behavior exhibited by said untrusted program (emphasis added).

The approach of Claim 1

Claim 1 provides an advantageous method for executing an untrusted program. According to Claim 1, a computer-implemented method establishes a limited environment within a general environment. The general environment comprises one or more real resources, while the limited environment comprises one or more mock resources. The general environment and the limited environment are both provided by the same operating system. Programs executed within the limited environment cannot access the one or more real resources of the general environment. The limited environment is examined after execution of the untrusted program to check for undesirable behavior exhibited by the untrusted program. Advantageously, the behavior of the untrusted program may be verified without putting the real resources in the general environment at risk.

General Environment and Limited Environment as claimed are not shown by Schnurer

Schnurer is cited to show several features of Claim 1. The portion of *Schnurer* cited to show a limited environment discusses virus trapping device 10 or emulation box 48 residing on virus trapping device 10. The portion of *Schnurer* cited to show a general environment discusses another computer being protected by virus trapping device 10, such as file server 42 or nodes 32. As is made clear in *Schnurer*, the general environment and the limited environment are implemented on different physical machines. Each physical machine runs a separate operating system. That being the case, it is clear that *Schnurer* does not disclose or suggest, "wherein said limited environment and said

general environment are both provided by the same operating system," as recited in Claim 1. Indeed, the Office Action acknowledges, "*Schnurer* does not specifically teach wherein said limited environment and said general environment are both provided by the same operating system."

In view of the deficiencies of *Schnurer*, the Office Action relies upon *Nachenberg* to show this feature by stating:

> Nachenberg teaches an antivirus program that includes a decryption, exploration and evaluation phases/modules causing a CPU emulator with virtual memory to simulate untrusted programs/instructions [Nachenburg, col. 1, lines 16-20; col. 5, lines 27-40; col. 6, lines 52-58; col. 7, line 31 – col. 8, line 47].

The Office Action alleges that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teaching of *Schnurer* with the teaching of *Nachenberg* by implementing the limited environment in the same machine as the general environment if the limited environment is limited to protect a specific machine and to have an operating system within the machine providing both environments for the same reason." Applicant respectfully submits that this is in error, as *Schnurer* expressly, and in very clear, colorful, and emphatic language, teaches away from just such a combination.

Combination of the references would destroy *Schnurer*

The Examiner's suggestion of having a single operating system provide both the general environment and the limited environment in *Schnurer* would destroy *Schnurer*. *Schnurer* states:

> "The inventors recognize that it can be done without a transplatform, but it will be slow and absolutely unsafe. The use of a foreign operating system can be likened to the use of lead walls and glass walls and mechanical

arms used by people manipulating radioactive materials in a lab. While it is certainly possible to pick up radioactivity with one's bare hands, it is not highly recommended or is it safe. While the invention can be had without the use of a foreign operating system, it is not highly recommended nor is it safe" (Col. 4, line 63 – Col. 5, line 5).

"The use of a foreign operating system guarantees the invention a high degree of safety and impenetrability. While the inventors recognize that such invention can be built without the use of a foreign operating system, such a version of the invention would lack any credible degree of security. In addition, without the use of a foreign operating system the invention itself risks contamination." (Col. 4, lines 11-17).

Thus, *Schnurer* strongly teaches away from having a single operating system providing anything analogous to both the general environment and the limited environment. *Schnurer* teaches that, while it is possible to do so, not using a foreign operating system is "not highly recommended nor is it safe." One skilled in the art, having read the portion of *Schnurer* quoted above, would have been highly motivated to not have both the limited environment and the general environment provided by the same operating system.

Moreover, *Schnurer* teaches, "without the use of a foreign operating system the invention itself risks contamination" and would be "absolutely unsafe." As a result, any advantage provided by the teachings of *Schnurer* would be lost if a foreign operating system is not used. Consequently, *Schnurer* would be destroyed if the Examiner's suggestion were to be carried out.

As explained above, *Schnurer* and *Nachenberg* cannot be properly combined as suggested by the Examiner to support the rejection based on 35 U.S.C. § 103(a) of Claim 1. Consequently, Claim 1 is patentable over the cited art and is in condition for allowance.

Claims 3-17 and 19-32

Claims 3-16 are dependent claims, each of which depends (directly or indirectly) from Claim 1. Each of Claims 3-16 is therefore allowable for at least the reasons given above with respect to Claim 1. In addition, each of Claims 3-16 introduces one or more additional limitations that independently render it patentable. Due to the fundamental differences already identified, to expedite the positive resolution of this case, a separate discussion of the limitations of Claims 3-16 is not included at this time. The Applicant reserves the right to further point out the differences between the cited art and the novel features recited in the dependent claims at a later time.

Claims 17 and 19-32 include limitations similar to Claims 1 and 3-16 respectively, except in the context of computer-readable media. It is therefore respectfully submitted that Claims 17 and 19-32 are patentable over *Schnurer* for at least the reasons given above with respect to Claims 1 and 3-16.

CONCLUSION

For the reasons given above, the Applicant submits that the pending claims are patentable over the art of record, including the art cited but not applied. Accordingly, allowance of all pending claims is respectfully solicited.

The Examiner is invited to telephone the undersigned at (408) 414-1225 to discuss any issue that may advance prosecution.

No fee is believed to be due specifically in connection with this Reply. The Commissioner is authorized to charge any fee that may be due in connection with this Reply to our Deposit Account No. 50-1302.

Respectfully submitted,

HICKMAN PALERMO TRUONG & BECKER LLP

Dated: May 4, 2006
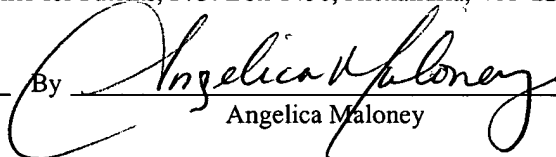
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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: **Mail Stop AF**, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

On May 4, 2006 By _____
Angelica Maloney